WHAT IS CLAIMED IS:

1. A current mirror circuit, comprising:

a resistor having a first terminal connected to a current source, and a second terminal;

a first transistor having a gate electrode connected to said second terminal for receiving a first bias voltage, a source electrode connected to a first power source, and a substrate electrode connected to a drain electrode thereof;

a second transistor having a gate electrode connected to said gate electrode of said first transistor, a source electrode connected to said first power source, a substrate electrode connected to said substrate electrode of said first transistor, and a drain electrode;

a third transistor having a gate electrode connected to said first terminal of said resistor for receiving a second bias voltage, a source electrode connected to said drain electrode of said first transistor, a substrate electrode connected to said substrate electrode of said first transistor, and a drain electrode connected to said second terminal of said resistor; and

a fourth transistor having a gate electrode connected to said gate electrode of said third transistor, a source electrode connected to said drain electrode of said second transistor, and a drain electrode for providing an output current.

2. The current mirror circuit according to claim 1, wherein said current mirror circuit operates under a low bias gate voltage.

3. The current mirror circuit according to claim 1, wherein said first transistor, said second transistor, said third transistor, and said fourth transistor are N-channel metal oxide semiconductor field effect transistors.

4. The current mirror circuit according to claim 1, wherein said first power source is the ground.

5. The current mirror circuit according to claim 1, wherein said current source is connected to a second power source.